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2	INZZ	YEAR=2006	unrestricted	420652	show titles
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4	INZZ	valve WITH current AND electromagnetic WITH valve AND pulse	unrestricted	4	show titles

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- Classification codes A: Physics, 2-3
- Classification codes A: Physics, 4-5
- Classification codes A: Physics, 6

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- Classification codes A: Physics, 8
- Classification codes A: Physics, 9
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2006. (INZZ) Line mass-density measurements of gas puff Z-pinch load using high sensitive laser interferometer.

☐ 2 display full document

1999. (INZZ) **Pulse electromagnetic** light **valve** based on adaptive fuzzy control.

☐ 3 display full document

1981. (INZZ) Springless fast opening **electromagnetic valve.**

☐ 4 display full document

1976. (INZZ) Controlling **electromagnetic** compressor **valve.**

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☑ **document 1 of 4** Order Document

Inspec - 1898 to date (INZZ)

Accession number & update
0009100815 20070101.

Title
Line mass-density measurements of gas puff Z-pinch load using high sensitive laser interferometer.

Source
High Power Laser and Particle Beams, {High-Power-Laser-Part-Beams-China}, June 2006, vol. 18, no. 6, p. 1049-52, 19 refs, CODEN: QYLIEL, ISSN: 1001-4322.
Publisher: Nucl. Soc. China, China.

Author(s)
He-An, Yang-Xiang-dong, Deng-Jian-jun, Li-Ye-xun, Li-Feng-ping, Jiang-Wei, Chen-Lin, Zou-Jie.

Author affiliation
He An, Yang Xiang-dong, Inst. of Atomic & Molecular Phys., Sichuan Univ., Chengdu, China.

Abstract
The high sensitive laser interferometer of checking minuteness phase shift 0.2° was built using the way of heterodyne and phase track. The line mass-density of gas puff Z-pinch load was measured. The interruption of machine vibration to interference-signal was eliminated by putting the interferometer into the vacuum chamber and setting the laser and vacuum chamber and optic elements on the full gas optical platform. The curve of average line mass-density of Ar gas load varying with time was obtained. It can be used to optimize the Lavale nozzle design. The forming time of gas fluid stationary state is helpful for adjusting the synchronization between the opening time of **electromagnetic valve** and the drive **current** from **pulse** power facilities in Z-pinch experiment.

Descriptors
ARGON; LIGHT-INTERFEROMETERS; MEASUREMENT-BY-LASER-BEAM; NOZZLES; PLASMA-DENSITY; PLASMA-DIAGNOSTICS; PULSED-POWER-SUPPLIES; Z-PINCH.

Classification codes
A5270K Optical-ultraviolet-visible-infrared-plasma-diagnostic-techniques*;
A4262E Metrological-applications-of-lasers;
A5255E Pinch-effect-and-pinch-machines;
A5225L Plasma-temperature-and-density;
A0760L Optical-interferometry;
B4360E Metrological-applications-of-lasers*;

B8360 Power-convertors-and-power-supplies-to-apparatus.

Keywords

line-mass-density-measurements; gas-puff-Z-pinch-load; high-sensitive-laser-interferometer; machine-vibration; interference-signal; vacuum-chamber; Ar-gas-load; Lavale-nozzle-design; gas-fluid-stationary-state; synchronization; **electromagnetic-valve; drive-current; pulse-** power-facility; Ar.

Treatment codes

P Practical;
X Experimental.

Chemical indexing

Ar-el.

Language

Chinese.

Publication type

Journal-paper.

Availability

SICI: 1001-4322(200606)18:6L.1049:LMDM; 1-S.

Publication year

2006.

Publication date

20060600.

Edition

2006040.

Copyright statement

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☑ **document 2 of 4** Order Document

Inspec - 1898 to date (INZZ)

Accession number & update
0006630452 20070101.

Title
Pulse electromagnetic light **valve** based on adaptive fuzzy control.

Source
Journal of Applied Sciences, {J-Appl-Sci-China}, Dec. 1999, vol. 17, no. 4, p. 463-8, 5 refs, CODEN: YKXUD4, ISSN: 0255-8297.
Publisher: Editorial Committee of J. Applied Sciences, China.

Author(s)
Hu-Hanping, Wu-Xiaogang, Mu-Chenpeng, Li-Dehua, Wang-Zuxi, Zhou-Yan.

Author affiliation
Hu Hanping, Wu Xiaogang, Mu Chenpeng, Li Dehua, Wang Zuxi, Zhou Yan, Inst. of PR&AI, Open Lab. of Image Inf. Process. Intelligent Control, Wuhan, China.

Abstract
This paper introduces an adaptive high-speed **pulse electromagnetic** light **valve.** Because of some uncertainty of **electromagnetic** light valves, in order to raise the frequency of the **valve** in certain basic structure by adjusting the parameters of drive **current,** we observed the status of the **valve** in various controllable parameters through experiments. Then, these data are used to design adaptive fuzzy control system by means of genetic algorithms. The advantages of the **valve** are no influence on the character of the light path, simple structure, long life, high frequency and relatively large switch calibre, etc. The **valve** is applied successfully in 3D laser scanning equipment.

Descriptors
ADAPTIVE-CONTROL; FUZZY-CONTROL; GENETIC-ALGORITHMS; HIGH-SPEED-OPTICAL-TECHNIQUES; LIGHT-VALVES; OPTICAL-CONTROL; OPTICAL-SCANNERS.

Classification codes
B4150D Liquid-crystal-devices*;
B0260 Optimisation-techniques;
B0170S Control-equipment-and-processes-in-production-engineering;
C3380P Control-of-optical-systems*;
C1340E Self-adjusting-control-systems;
C1340F Fuzzy-control;

C1180 Optimisation-techniques;
E0210G Optimisation*;
E1550 Control-technology-and-theory;
E3644N Optoelectronics-manufacturing.

Keywords
adaptive-fuzzy-control; **high-speed-pulse-electromagnetic-light-valve;** genetic-algorithm; 3D-laser-scanner.

Treatment codes
T Theoretical-or-mathematical.

Language
Chinese.

Publication type
Journal-paper.

Availability
SICI: 0255-8297(199912)17:4L.463:PELV; 1-F.

Publication year
1999.

Publication date
19991200.

Edition
2000026.

Document

Select the documents you wish to save or order by clicking the box next to the document, or click the link above the document to order directly.

☑ **document 3 of 4** Order Document

Inspec - 1898 to date (INZZ)

Accession number & update
0001664367 20070101.

Title
Springless fast opening **electromagnetic valve.**

Source
Indian Journal of Pure and Applied Physics, {Indian-J-Pure-Appl-Phys-India}, Jan. 1981, vol. 19, no. 1, p. 56-60, 12 refs, CODEN: IJOPAU, ISSN: 0019-5596, India.

Author(s)
Venkataramani-N, Mattoo-S-K.

Author affiliation
Venkataramani, N., Mattoo, S.K., Phys. Res. Lab., Ahmedabad, India.

Abstract
A springless fast **electromagnetic valve** is described. The performance of the **valve** is determined in terms of the parameters of the neutral gas cloud it admits into a system maintained at a base pressure of 10 /sup -5/ torr. The **valve** opens for about 500 musec and admits ~10/sup 19/.10/sup 20/ gas molecules in one shot of its operation. Whereas theoretical considerations suggest that a **current** of about 300 A is sufficient to open the **valve,** experience has shown that the practical requirement is ~3 kA. This order of magnitude discrepancy is attributed to various frictional forces which could not be taken into account in the theoretical treatment. The calculated time profile of the gas cloud is found to be in agreement with the neutral gas **pulse** width determined by a reflex discharge probe.

Descriptors
PLASMA-DEVICES; VALVES.

Classification codes
A5275 Plasma-devices-and-applications*.

Keywords
springless-fast-electromagnetic-valve; neutral-gas-cloud; gas- molecules; frictional-forces; **neutral-gas-pulse;** reflex-discharge-probe.

Treatment codes
T Theoretical-or-mathematical;
X Experimental.

Language

English.

Publication type
Journal-paper.

Publication year
1981.

Publication date
19810100.

Edition
1981005.

Copyright statement
Copyright 1981 IEE.

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☑ **document 4 of 4** Order Document

Inspec - 1898 to date (INZZ)

Accession number & update
0000910701 20070101.

Title
Controlling **electromagnetic** compressor **valve.**

Patent information
Patent number: GB-1415444.
Filing/submission date: 19730710.
Publication date: 19760106.
Country of publication: UK.

Author(s)
Scherbakov-V-S.

Abstract
The solenoid operated **valve** has an **electromagnetic** coil and a **valve** plate movable to two positions. To set the **valve** in its first state the coil is energised by a **current pulse** long enough only to magnetise the magnetic circuit so that the plate is held to the pole piece by remanent magnetisation following termination of the **pulse.** In its second state the coil is energised by an opposite polarity **pulse** long enough for the circuit to become demagnetised so that the plate moves to its second position. The circuit can be used with a temperature sensor to control operation of a refrigeration compressor.

Descriptors
COMPRESSORS; REFRIGERATION; SOLENOIDS; VALVES.

Classification codes
B5180F Solenoids-and-electromagnets*;
B8560 Refrigeration-and-cold-storage;
C3260B Electric-actuators-and-final-control-equipment*;
C3340B Control-of-heat-systems.

Keywords
electromagnetic-compressor-valve; solenoid-operated-valve; magnetic- circuit; remanent-magnetisation; refrigeration-compressor.

Treatment codes
A Application;
P Practical.

Language

English.
Publication type
Patent.
Publication year
1976.
Publication date
19760106.
Edition
1976005.
Copyright statement
Copyright 1976 IEE.

Refine Search

Search Results -

Terms	Documents
10/773,668	1

Database: US Pre-Grant Publication Full-Text Database
US Patents Full-Text Database
US OCR Full-Text Database
EPO Abstracts Database
JPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Search: L26

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Search History

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	DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES; OP=OR		
L26	10/773,668	1	L26
L25	L24 and (solenoid$ and heterod$) and (cross$ or section$) and (valve$ with current$) and (pwm$ or pulse$)	0	L25
L24	l20 or l21 or l23	56	L24
	DB=USPT; THES=ASSIGNEE; PLUR=YES; OP=OR		
L23	(4102222 | 4201116 | 5119683 | 4941321 | 5577534 | 4550953 | 2775982 | 4266572 | 5191827 | 5571248 | 4396037 | 4041983 | 5115395 | 3949645 | 4021712 | 4321946 | 4478250 | 4131325 | 4373697 | 4009695 | 4843902 | 5063813 | 5417241 | 3740615 | 5251671 | 5048329 | 4643225 | 4067357 | 4779489 | 5197583 | 5079971)![PN]	31	L23
	DB=USPT,DWPI; THES=ASSIGNEE; PLUR=YES; OP=OR		
L22	("5404301"| "4543875"| "6374856"| "DE 3245259A"| "EP 628742A"| "DE 29705635U")[ABPN1,NRPN,PN]	6	L22

	DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES; OP=OR		
L21	l19	6	L21
	DB=USPT,DWPI; THES=ASSIGNEE; PLUR=YES; OP=OR		
L20	("5404301"| "4543875"| "6374856"| "DE 3245259A"| "EP 628742A"| "DE 29705635U")[URPN]	19	L20
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L19	4543875.pn. or 6374856.pn. or 5404301.pn.	6	L19
L18	L17 and (pwm$ or pulse$)	0	L18
L17	L16 and (valve$ with current$)	2	L17
L16	L13 and (cross$ or section$)	32	L16
L15	L13 and super$	0	L15
L14	L13 and heterod$	0	L14
L13	mannesmann$ and (valve$ with electro$)	78	L13
L12	L9 and (valve$ with electro$)	0	L12
L11	L9 and (valve$ with current$)	0	L11
L10	L9 and (solenoid$ and heterod$)	0	L10
L9	mannesmann.inv.	40	L9
	DB=USPT; THES=ASSIGNEE; PLUR=YES; OP=OR		
L8	L4 and super$	1	L8
L7	L4 and heterodyn$	0	L7
L6	L4 and (heterodyn$ and (super$ or impos$))	0	L6
L5	L4 and cross$	0	L5
L4	5404301.pn.	1	L4
	DB=PGPB,USPT,EPAB,DWPI; THES=ASSIGNEE; PLUR=YES; OP=OR		
L3	L1 and (cross$ with section$)	0	L3
	DB=USPT; THES=ASSIGNEE; PLUR=YES; OP=OR		
L2	US-5404301-A.did.	1	L2
	DB=PGPB,USPT,EPAB,DWPI; THES=ASSIGNEE; PLUR=YES; OP=OR		
L1	SLICKER.INV. AND SOLENOID$ AND PULSE$	4	L1

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Search Results - Record(s) 1 through 6 of 6 returned.

☑ 1. Document ID: US 6374856 B1

L19: Entry 1 of 6 File: USPT Apr 23, 2002

US-PAT-NO: 6374856
DOCUMENT-IDENTIFIER: US 6374856 B1

TITLE: Valve device, especially a combined proportional-distributing valve device

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☑ 2. Document ID: US 5404301 A

L19: Entry 2 of 6 File: USPT Apr 4, 1995

US-PAT-NO: 5404301
DOCUMENT-IDENTIFIER: US 5404301 A

TITLE: Method and apparatus of vehicle transmission control by assured minimum pulse width

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☑ 3. Document ID: US 4543875 A

L19: Entry 3 of 6 File: USPT Oct 1, 1985

US-PAT-NO: 4543875
DOCUMENT-IDENTIFIER: US 4543875 A

TITLE: Electro-hydraulic directional control valve

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☑ 4. Document ID: JP 2005114157 A, DE 29705635 U1, DE 19719557 A1, WO 9844266 A1, EP 904495 A1, JP 2000511620 W, KR 2000016262 A, US 6374856 B1, EP 904495 B1, DE 59808592 G, JP 3600936 B2

L19: Entry 4 of 6 File: DWPI Apr 28, 2005

DERWENT-ACC-NO: 1998-429113

DERWENT-WEEK: 200529
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TITLE: Combined proportioning and selector valve - generates actuating force over part of working range to give proportioning effect

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☑ 5. Document ID: CN 1053624 C, EP 628742 A1, AU 9463342 A, BR 9401772 A, CZ 9401368 A3, CA 2125133 A, US 5404301 A, ZA 9403867 A, JP 07151225 A, AU 668037 B, EP 628742 B1, DE 69400844 E, ES 2094026 T3, CN 1103839 A, RU 2123440 C1, CA 2125133 C, CZ 287765 B6, KR 300295 B

L19: Entry 5 of 6 File: DWPI Jun 21, 2000

DERWENT-ACC-NO: 1995-015775
DERWENT-WEEK: 200468
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TITLE: Vehicle transmission control by minimum pulse width - supplies solenoid valves with fluid incrementally to operate clutch or brake actuators optimised with feedback

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☑ 6. Document ID: DE 3245259 A, DE 3245259 C, US 4543875 A

L19: Entry 6 of 6 File: DWPI Jun 7, 1984

DERWENT-ACC-NO: 1984-147176
DERWENT-WEEK: 198424
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TITLE: Simplified electrohydraulic valve - has main control slide of main valve controlling pressure path to and from load

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS

Terms	Documents
4543875.pn. or 6374856.pn. or 5404301.pn.	6

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L3 and (vehicle or car or automobile)	8

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US Patents Full-Text Database
US OCR Full-Text Database
EPO Abstracts Database
JPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Search: L6

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L6	L3 and (vehicle or car or automobile)	8	L6
L5	L3 and (heterod$ or pwm$)	1	L5
L4	L3 and (clock$ with frequenc$)	0	L4
L3	(electromagnetic$ with valve) and (valve with current) and pulse and frequenc$	43	L3
L2	(electromagnetic$ with valve) and (valve adj current) and pulse and frequenc$	0	L2
L1	(electromagnetic$ adj valve) and (valve adj current) and pulse and frequenc$	0	L1

END OF SEARCH HISTORY

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End of Result Set

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L5: Entry 1 of 1 File: JPAB Sep 18, 2002

PUB-NO: JP02002267039A
DOCUMENT-IDENTIFIER: JP 2002267039 A
TITLE: SOLENOID VALVE

PUBN-DATE: September 18, 2002

INVENTOR-INFORMATION:
NAME COUNTRY
OGAWARA, ICHIRO

ASSIGNEE-INFORMATION:
NAME COUNTRY
SAGINOMIYA SEISAKUSHO INC

APPL-NO: JP2001063506
APPL-DATE: March 7, 2001

INT-CL (IPC): F16K 31/06; F04B 27/14; F04B 49/06

ABSTRACT:

PROBLEM TO BE SOLVED: To avoid generation of hysteresis by operating a valve element in an oscillating manner even when the PWM frequency is high and the amplitude of the coil current is small.

SOLUTION: In a solenoid valve in which a bellows device 21 is expanded/ contracted according to the differential pressure between the intake pressure Ps and the internal pressure of the bellows, the position of the valve element 17 is determined according to the balance between the load on the valve element 17, the magnetic attraction force generated by an electromagnetic coil device 51 to be energization-controlled by the modulation of the pulse width, and the spring force of a valve spring 20 by the expansion/contraction of the bellows device 21, and the valve opening is increased/decreased according to the valve position, the natural frequency of a spring-mass system is set according to the pulse width modulation frequency so that the spring-mass system including the valve element 17 and the valve spring 20 generates resonance under energization-control by the modulation of the pulse width of the electromagnetic coil device 51.

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Search Results - Record(s) 1 through 8 of 8 returned.

☐ 1. Document ID: JP 02034474 A

L6: Entry 1 of 8 File: JPAB Feb 5, 1990

PUB-NO: JP402034474A
DOCUMENT-IDENTIFIER: JP 02034474 A
TITLE: STEERING FORCE CONTROL DEVICE

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐ 2. Document ID: DE 10332489 A1

L6: Entry 2 of 8 File: EPAB Feb 24, 2005

PUB-NO: DE010332489A1
DOCUMENT-IDENTIFIER: DE 10332489 A1
TITLE: Response method for electromagnetic adjustment device e.g. of motor vehicle combustion engine gas-exchange valve, requires driving electromagnet by sequence of current pulses at current pulse frequency of initial pulse of sequence

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐ 3. Document ID: EP 75657 A2

L6: Entry 3 of 8 File: EPAB Apr 6, 1983

PUB-NO: EP000075657A2
DOCUMENT-IDENTIFIER: EP 75657 A2
TITLE: Control device for electromagnetic valves.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐ 4. Document ID: DE 1004027217 A1

L6: Entry 4 of 8 File: DWPI Dec 29, 2005

DERWENT-ACC-NO: 2006-081169
DERWENT-WEEK: 200609

TITLE: Hydraulic servo drive system operating method for automobile, involves varying pulse-width modulated voltage fundamental frequency independent of phase

time variations by random number so that varied frequency is within frequency spectrum

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

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☐ 5. Document ID: DE 10332489 A1

L6: Entry 5 of 8 File: DWPI Feb 24, 2005

DERWENT-ACC-NO: 2005-184429
DERWENT-WEEK: 200520

TITLE: Response method for electromagnetic adjustment device e.g. of motor vehicle combustion engine gas-exchange valve, requires driving electromagnet by sequence of current pulses at current pulse frequency of initial pulse of sequence

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

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☐ 6. Document ID: US 6170506 B1

L6: Entry 6 of 8 File: DWPI Jan 9, 2001

DERWENT-ACC-NO: 2001-158317
DERWENT-WEEK: 200116

TITLE: Solenoid operated regulator valve cleaning involves controlling pulse width and amplitude of current pulse to be supplied to valve actuator during calibration, based on degree of contamination of valve environment

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

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☐ 7. Document ID: WO 9519282 A1, JP 09507661 W, US 5458406 A, EP 735961 A1

L6: Entry 7 of 8 File: DWPI Jul 20, 1995

DERWENT-ACC-NO: 1995-263779
DERWENT-WEEK: 199741

TITLE: Electronic relief valve for motor vehicle brake traction slip control - uses electronic control of isolation valve coupled to brake conduit to supply preselected energising current corresp. to desired pressure

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

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☐ 8. Document ID: FR 2484106 A, DE 3172501 G, EP 44263 A, EP 44263 B

L6: Entry 8 of 8 File: DWPI Dec 11, 1981

DERWENT-ACC-NO: 1982-A5597E
DERWENT-WEEK: 198203

TITLE: Current to flow converter for hydraulic jacking system - provides rapid response by alternate switching of two electromagnetic valves with high rate duty cycles

Terms	Documents
L3 and (vehicle or car or automobile)	8

First Hit Previous Doc Next Doc Go to Doc#

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L6: Entry 1 of 8 File: JPAB Feb 5, 1990

PUB-NO: JP402034474A
DOCUMENT-IDENTIFIER: JP 02034474 A
TITLE: STEERING FORCE CONTROL DEVICE

PUBN-DATE: February 5, 1990

INVENTOR-INFORMATION:
NAME COUNTRY
ETO, KUNIHIKO
MORI, YUTAKA
MATSUMOTO, TSUTOMU
TAKAHASHI, YOSHIO

ASSIGNEE-INFORMATION:
NAME COUNTRY
TOYODA MACH WORKS LTD

APPL-NO: JP63185754
APPL-DATE: July 26, 1988

US-CL-CURRENT: 257/184
INT-CL (IPC): B62D 6/02

ABSTRACT:

PURPOSE: To make it possible to obtain a favorable response to a handle operation during running at high speed by employing a range in which the control current amount of an electromagnetic valve changes in response to the steering frequency as a function of car speed in the case of an electromagnetic control valve for restricting assist force increased by a power cylinder.

CONSTITUTION: A power steering device 10 transmits steering torque applied with assist force increased by a power cylinder 12 to a steering wheel. The above-mentioned assist force is restricted in response to the opening of an electromagnetic control valve 20 controlled by a steering force control circuit 40 based on signals from a steering angle sensor 30 and a car speed sensor 35. In this instance, the steering force control circuit 40 consists of a switching circuit 42 converting voltage signals from a conversion circuit 47 outputting voltage signals proportional to car speed into pulse signals according to pulse signals from the steering angle sensor 30, an integration circuit 45 smoothening the pulse signals, and an addition circuit 40 adding output signals from the integration circuit 45 and the conversion circuit 47.

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First Hit Previous Doc Next Doc Go to Doc#

Generate Collection Print

L6: Entry 2 of 8 File: EPAB Feb 24, 2005

PUB-NO: DE010332489A1
DOCUMENT-IDENTIFIER: DE 10332489 A1
TITLE: Response method for electromagnetic adjustment device e.g. of motor vehicle combustion engine gas-exchange valve, requires driving electromagnet by sequence of current pulses at current pulse frequency of initial pulse of sequence

PUBN-DATE: February 24, 2005

INVENTOR-INFORMATION:

NAME	COUNTRY
BAUMBACH, JENS	DE
BEYER, FRANK	DE
ELSAESER, ALFRED	DE
OTTO, RAINER	DE
SCHILLING, WOLFGANG	DE
SCHMIDT, JAN	DE

ASSIGNEE-INFORMATION:

NAME	COUNTRY
MAHLE FILTERSYSTEME GMBH	DE

APPL-NO: DE10332489
APPL-DATE: July 16, 2003

PRIORITY-DATA: DE10332489A (July 16, 2003)

INT-CL (IPC): H01F 7/18

ABSTRACT:

A method for exciting an adjustment device with at least an electromagnet and an armature which can be adjusted from an output position (A) against a spring restoring/resetting force in one direction in a first end-position (Ei) in which it rests against an armature counter-piece of the electromagnet. The electromagnet is driven by a predetermined sequence of several current pulses (13). A pulse frequency of the current pulses is reduced to the starting frequency assigned to the first current pulse (13) of the sequence. The starting frequency is made greater than a natural frequency of an oscillatory system containing the armature and spring restoring/resetting force.

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L6: Entry 3 of 8 File: EPAB Apr 6, 1983

PUB-NO: EP000075657A2
DOCUMENT-IDENTIFIER: EP 75657 A2
TITLE: Control device for electromagnetic valves.

PUBN-DATE: April 6, 1983

INVENTOR-INFORMATION:

NAME	COUNTRY
LEHMANN, ULRICH	

ASSIGNEE-INFORMATION:

NAME	COUNTRY
PORSCHE AG	DE

APPL-NO: EP82105799
APPL-DATE: June 30, 1982

PRIORITY-DATA: DE03138647A (September 29, 1981)

INT-CL (IPC): B60T 13/68
EUR-CL (EPC): B60T013/66; B60T008/50, B60T008/50

ABSTRACT:

CHG DATE=19990617 STATUS=O>1. A control apparatus for solenoid valves, in particular for pressure regulators of hydraulic vehicle braking units, which can be actuated with current pulses of controllable pulse width and constant pulse frequency and can be continuously varied, the pulse frequency being higher than the limit frequency resulting from the mass and readjusting spring constant of the solenoid valves (6, 7), characterized in that the pulse frequency amounts to between two and ten times the limit frequency.

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L6: Entry 4 of 8 File: DWPI Dec 29, 2005

DERWENT-ACC-NO: 2006-081169
DERWENT-WEEK: 200609

TITLE: Hydraulic servo drive system operating method for automobile, involves varying pulse-width modulated voltage fundamental frequency independent of phase time variations by random number so that varied frequency is within frequency spectrum

INVENTOR: BEGEROW, S; KIRCHNER, W

PATENT-ASSIGNEE: ZF LENKSYSTEME GMBH (ZAHF)

PRIORITY-DATA: 2004DE-A027217 (June 3, 2004)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 1004027217 A1	December 29, 2005		011	B62D005/09

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
DE1004027217A1	June 3, 2004	2004DE-A027217	

INT-CL (IPC): B62D 5/09

ABSTRACTED-PUB-NO: DE1004027217A
BASIC-ABSTRACT:

NOVELTY - The method involves varying a high and low phase times (28, 29) of a phase cycle of a pulse width modulated voltage by a random number. The fundamental frequency of the voltage is varied independent of the phase times variations by another random number such that the varied frequency lies within a given frequency spectrum. Magnetic coil current of an electromagnetic valve is controlled by a semiconductor switch based on the voltage.

DETAILED DESCRIPTION - The random numbers are generated according to the probability density function (26) of a micro-controller of a servo driver system.

USE - Used for operating a hydraulic servo drive system of an automobile.

ADVANTAGE - The fundamental frequency of the pulse width modulated voltage is varied by the random number independent of the high-phase time and low-phase time variations such that the varied frequency lies within the given frequency spectrum, minimizing the interferences and improving the electromagnetic compatibility.

DESCRIPTION OF DRAWING(S) - The drawing shows a schematic representation of a procedure for the variation of a high-phase time and a low-phase time and spreading of the frequency spectrum.

Fundamental frequency of pulse-width modulated voltage f0

Probability density function 26

High phase time 28

Low phase time 29

Frequency generator 35

ABSTRACTED-PUB-NO: DE1004027217A
EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.6/8

DERWENT-CLASS: Q18 X22
EPI-CODES: Q18-B06C; X22-C02;

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L6: Entry 5 of 8 File: DWPI Feb 24, 2005

DERWENT-ACC-NO: 2005-184429
DERWENT-WEEK: 200520

TITLE: Response method for electromagnetic adjustment device e.g. of motor vehicle combustion engine gas-exchange valve, requires driving electromagnet by sequence of current pulses at current pulse frequency of initial pulse of sequence

INVENTOR: BAUMBACH, J; BEYER, F ; ELSAESSER, A ; OTTO, R ; SCHILLING, W ; SCHMIDT, J

PATENT-ASSIGNEE: MAHLE FILTERSYSTEME GMBH (MAHLN)

PRIORITY-DATA: 2003DE-1032489 (July 16, 2003)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 10332489 A1	February 24, 2005		011	H01F007/18

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
DE 10332489A1	July 16, 2003	2003DE-1032489	

INT-CL (IPC): H01F 7/18

ABSTRACTED-PUB-NO: DE 10332489A
BASIC-ABSTRACT:

NOVELTY - The method for exciting an adjustment device with at least an electromagnet and an armature which can be adjusted from an output position (A) against a spring restoring/resetting force in one direction in a first end-position (Ei) in which it rests against an armature counter-piece of the electromagnet. The electromagnet is driven by a predetermined sequence of several current pulses (13). A pulse frequency of the current pulses is reduced to the starting frequency assigned to the first current pulse (13) of the sequence. The starting frequency is made greater than a natural frequency of an oscillatory system containing the armature and spring restoring/resetting force.

USE - For actuating a gas-exchange valve in a combustion engine e.g. of a motor vehicle.

ADVANTAGE - Functions properly with a comparatively large bandwidth of natural frequencies.

DESCRIPTION OF DRAWING(S) - The diagram with corresponding excitation procedure shows a sequence of current pulses with the resulting armature movement over time.

Current pulses 13

Output position A

First end position Ei

ABSTRACTED-PUB-NO: DE 10332489A
EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.2/3

DERWENT-CLASS: V02 X22
EPI-CODES: V02-E02A; X22-A03G;

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L6: Entry 6 of 8 File: DWPI Jan 9, 2001

DERWENT-ACC-NO: 2001-158317
DERWENT-WEEK: 200116

TITLE: Solenoid operated regulator valve cleaning involves controlling pulse width and amplitude of current pulse to be supplied to valve actuator during calibration, based on degree of contamination of valve environment

INVENTOR: BUTWIN, J; CICALA, S M ; HAASE, R C ; MONAGHAN, M J ; PROTOPAPAS, M E ; WICKLER, W

PATENT-ASSIGNEE: FORD GLOBAL TECHNOLOGIES INC (FORD)

PRIORITY-DATA: 1999US-0246519 (February 8, 1999)

PATENT-FAMILY:

	PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
☐	US 6170506 B1	January 9, 2001		011	F16K031/02

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
US 6170506B1	February 8, 1999	1999US-0246519	

INT-CL (IPC): F16K 31/02; H01F 7/18

ABSTRACTED-PUB-NO: US 6170506B
BASIC-ABSTRACT:

NOVELTY - Pulse width and pulse amplitude of current pulse supplied to electromagnetic actuator for valve are controlled to effect instantaneous response of valve. The pulse width and amplitude are determined during calibration from transfer function results that indicate robust performance in presence of expected level of contamination of valve environment.

DETAILED DESCRIPTION - The current pulses, when the electrohydraulic valve is calibrated, provides precise mechanical movement without excessive pressure change in controlled element such as transmission clutch or brake. An INDEPENDENT CLAIM is also included for cleaning cycle driver circuit for solenoid operated regulator valve in hydraulic control valve system.

USE - For cleaning solenoid operated regulator valve for purging oil borne contaminants from the valve in hydraulic control valve system for automatic transmission control in automotive vehicle drive line. Also in other environment such as flow divider in power steering circuit or in other pressure regulated valve systems in non-automotive vehicle control valve systems.

ADVANTAGE - The effect of hysteresis and inaccuracies due to contamination can further be reduced by utilizing dither frequency on applied current. The driver circuit is flexible for purposes of calibration and is programmable for various solenoid valve system by determining pulse width, pulse amplitude corresponding to the particular solenoid design.

DESCRIPTION OF DRAWING(S) - The figure shows the schematic representation of cleaning cycle driver circuit.

ABSTRACTED-PUB-NO: US 6170506B
EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.11/11

DERWENT-CLASS: Q66 V02 X22 X25
EPI-CODES: V02-E02A1; X22-G01; X25-L01A;

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L6: Entry 7 of 8 File: DWPI Jul 20, 1995

DERWENT-ACC-NO: 1995-263779
DERWENT-WEEK: 199741

TITLE: Electronic relief valve for motor vehicle brake traction slip control - uses electronic control of isolation valve coupled to brake conduit to supply preselected energising current corresp. to desired pressure

INVENTOR: HALL, T J

PATENT-ASSIGNEE: ITT IND INC (INTT), ITT CORP (INTT)

PRIORITY-DATA: 1994US-0181928 (January 14, 1994)

PATENT-FAMILY:

	PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
☐	WO 9519282 A1	July 20, 1995	E	019	B60T008/48
☐	JP 09507661 W	August 5, 1997		018	B60T008/34
☐	US 5458406 A	October 17, 1995		007	B60T008/32
☐	EP 735961 A1	October 9, 1996	E	001	B60T008/48

DESIGNATED-STATES: JP AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE DE FR GB IT

CITED-DOCUMENTS:DE 4002865; WO 9308055

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
WO 9519282A1	January 17, 1995	1995WO-US00490	
JP 09507661W	January 17, 1995	1995JP-0519140	
JP 09507661W	January 17, 1995	1995WO-US00490	
JP 09507661W		WO 9519282	Based on
US 5458406A	January 14, 1994	1994US-0181928	
EP 735961A1	January 17, 1995	1995EP-0908500	
EP 735961A1	January 17, 1995	1995WO-US00490	
EP 735961A1		WO 9519282	Based on

INT-CL (IPC): B60T 8/32; B60T 8/34; B60T 8/36; B60T 8/48

ABSTRACTED-PUB-NO: US 5458406A
BASIC-ABSTRACT:

The system includes a master cylinder (12) which is operated by the vehicle operator's brake pedal (16) and facilitates supply of hydraulic fluid to the brake system from a reservoir (14).

The electromagnetically actuated isolation valve (32), coupled to the brake system (10), is electronically controlled by supplying a preselected level of energising current which corresponds with a holding pressure approximately equal to the max. desired level of pressure during the traction slip control manoeuvre.

USE/ADVANTAGE - Enables control of electromagnetically operated relief valve in vehicle brake system by selectively energising solenoid so as to control max. pressure obtained during traction slip control manoeuvre.

ABSTRACTED-PUB-NO: WO 9519282A
EQUIVALENT-ABSTRACTS:

I claim:

1. A system for relieving undesirable pressure from within a vehicle brake system, comprising:

a reservoir for holding hydraulic fluid;

a conduit connecting said reservoir to a wheel brake for communicating hydraulic fluid from said reservoir to said wheel brake;

an electromagnetically actuated isolation valve connected to said conduit, said isolation valve having a first valve position for isolating said wheel brake from said reservoir, said isolation valve having a holding pressure associated with said first valve position, said holding pressure being proportional to an actuating signal supplied to said isolation valve, said valve opening from said first valve position in response to a pressure within said system that exceeds said holding pressure;

a pump for generating braking pressure within said conduit to cause said hydraulic fluid to bear against said wheel brake when said isolation valve is in said first valve position, said pump being hydraulically connected to said conduit between said isolation valve and said wheel brake; and

means for supplying an actuating signal to said isolation valve such that said valve opens from said first valve position to allow hydraulic fluid to exit said conduit into said reservoir to thereby relieve undesirable pressure from within said conduit during a traction control manoeuvre,

wherein said holding pressure is proportional to a current amplitude of said actuating signal,

wherein said signal supplying means produces said actuating signal having a preselected current amplitude such that said holding pressure is maintained at a preselected level,

wherein said signal supplying means comprises a microprocessor electronically coupled with said system,

wherein said actuating signal is produced by said microprocessor, said signal comprising a series of pulses having a preselected pulse amplitude, pulse width and

frequency such that said actuating signal has an average. current amplitude.

CHOSEN-DRAWING: Dwg.1A/3 Dwg.1/3

DERWENT-CLASS: Q18 T01 X22
EPI-CODES: T01-J07C; X22-C01A;

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L6: Entry 8 of 8 File: DWPI Dec 11, 1981

DERWENT-ACC-NO: 1982-A5597E
DERWENT-WEEK: 198203

TITLE: Current to flow converter for hydraulic jacking system - provides rapid response by alternate switching of two electromagnetic valves with high rate duty cycles

INVENTOR: GUETTMANN, P

PATENT-ASSIGNEE: GUETTMANN P (GUETI)

PRIORITY-DATA: 1980FR-0013347 (June 10, 1980)

Search Selected Search ALL Clear

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
FR 2484106 A	December 11, 1981		012	
DE 3172501 G	November 7, 1985		000	
EP 44263 A	January 20, 1982	F	000	
EP 44263 B	October 2, 1985	F	000	

DESIGNATED-STATES: AT BE CH DE GB IT LI LU NL SE AT BE CH DE GB IT LI LU NL SE

CITED-DOCUMENTS:US 3279323; US 3295421 ; US 3521535 ; US 3659631 ; US 3740588 ; US 4015426

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
EP 44263A	June 9, 1981	1981EP-0440017	

INT-CL (IPC): F15B 9/03; F15B 13/04; F16H 5/40; G05D 3/18; G05D 7/06

ABSTRACTED-PUB-NO: EP 44263B
BASIC-ABSTRACT:

The appts. has a rapid response and is used in a distribution network for a fluid used in an automatic gearbox or load mover on a road haulage vehicle. A fluid flow from a reservoir passes through two electrovalves (1,2) with a high switching rate controlled from electronic control units (3,4). By switching the values with a controlled duty cycle at the high rate, pulses are avoided at a jack system (6) used to manoeuvre loads.

A position sensor (7) connected to the jack is connected to a comparator (8) which compares the actual position with a demand unit (9) signal. A threshold detector (11) compares the error signal with a sawtooth generator (10) output to drive one electrovalve controller (3) directly and the other (4) through a phase shift circuit (12). This ensures operation of the valves at the required rate.

ABSTRACTED-PUB-NO: FR 2484106A
EQUIVALENT-ABSTRACTS:

Rapid response current-flow converter for dosing a fluid flow and particularly a gaseous flow to a receiving means (6), particularly a load handling means such as a jack, or a distribution device; said converter comprising several electro-valves (1, 2) each controlled by an electronic control means (3, 4) and connected by their inlet to a pressurised fluid reservoir (5) and by their outlet to receiving means (6); and by a sensor means (7) measuring a parameter which is proportional to the flow, particularly a position sensor mechanically connected to the handling device (6) or a flow meter; the output of the sensor means (7) is connected to one input of a comparator (8), whose other input is connected to a desired or reference signal supplying member (9) said comparator (8) supplying a voltage which is a direct function of the difference between the desired value and the real value; said converter also having a saw tooth generator (10) connected to a threshold detector (11) connected to the output of the comparator (8) and which compares the signal form the saw tooth generator (10) with that from the comparator (8) and supplies a cyclical ration square wave signal, characterised in that the electro-valves (1, 2) have a fast switching frequency of approximately 100 Hz, that a phase shifting circuit (12) is provided for each electro-valve (2), excepting the first electro-valve, the inputs of these first electronic control means of the first electro-valve (1) and the phase shifting circuits (12) being connected to the output of the threshold detector (11) by a common connection point (C) and that the electronic control means (3, 4) allocated to the electro-valves (1, 2) have, at the electro-valve cut-off supply, a shift equal to n representing the number of electro-valves used. (9pp)

CHOSEN-DRAWING: Dwg.1

DERWENT-CLASS: Q57 Q64 T06 X22
EPI-CODES: T06-B04B; X22-X;

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Search Results - Record(s) 1 through 4 of 4 returned.

☐ 1. Document ID: US 5404301 A

L1: Entry 1 of 4 File: USPT Apr 4, 1995

US-PAT-NO: 5404301
DOCUMENT-IDENTIFIER: US 5404301 A

TITLE: Method and apparatus of vehicle transmission control by assured minimum pulse width

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐ 2. Document ID: US 4819597 A

L1: Entry 2 of 4 File: USPT Apr 11, 1989

US-PAT-NO: 4819597
DOCUMENT-IDENTIFIER: US 4819597 A

TITLE: Clocked current torque motor control

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐ 3. Document ID: EP 628742 A1

L1: Entry 3 of 4 File: EPAB Dec 14, 1994

PUB-NO: EP000628742A1
DOCUMENT-IDENTIFIER: EP 628742 A1
TITLE: Method and apparatus of vehicle transmission control by assured minimum pulse width.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De

☐ 4. Document ID: CN 1053624 C, EP 628742 A1, AU 9463342 A, BR 9401772 A, CZ 9401368 A3, CA 2125133 A, US 5404301 A, ZA 9403867 A, JP 07151225 A, AU 668037 B, EP 628742 B1, DE 69400844 E, ES 2094026 T3, CN 1103839 A, RU 2123440 C1, CA 2125133 C, CZ 287765 B6, KR 300295 B

L1: Entry 4 of 4 File: DWPI Jun 21, 2000

DERWENT-ACC-NO: 1995-015775
DERWENT-WEEK: 200468

TITLE: Vehicle transmission control by minimum pulse width - supplies solenoid valves with fluid incrementally to operate clutch or brake actuators optimised with feedback

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Terms	Documents
SLICKER.INV. AND SOLENOID$ AND PULSE$	4

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Search Results - Record(s) 1 through 1 of 1 returned.

☐ 1. Document ID: US 5404301 A

L2: Entry 1 of 1 File: USPT Apr 4, 1995

US-PAT-NO: 5404301
DOCUMENT-IDENTIFIER: US 5404301 A

TITLE: Method and apparatus of vehicle transmission control by assured minimum pulse width

DATE-ISSUED: April 4, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Slicker; James M.	West Bloomfield	MI		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Eaton Corporation	Cleveland	OH			02

APPL-NO: 08/072486 [PALM]
DATE FILED: June 7, 1993

INT-CL-ISSUED: [06] G06F 15/50

INT-CL-CURRENT:

TYPE	IPC	DATE
CIPS	F16 D 48/00	20060101
CIPS	F16 H 61/02	20060101
CIPS	F16 D 48/06	20060101

US-CL-ISSUED: 364/424.1; 364/426.03, 364/424.01, 192/3.3, 192/3.58, 477/138, 477/131, 477/161
US-CL-CURRENT: 701/60; 192/3.3, 192/3.58, 477/131, 477/138, 477/161, 701/51

FIELD-OF-CLASSIFICATION-SEARCH: 364/424.1, 364/431.1-431.12, 364/424.01, 364/426.03, 192/3.3, 192/3.58, 192/35, 192/58, 192/85, 192/103, 192/57, 192/.052, 192/.073, 74/866, 74/867, 74/868, 74/869, 74/335, 74/733.1, 73/168, 73/37, 73/40, 73/46, 180/197, 180/167, 477/62, 477/138, 477/131, 477/80, 477/132, 477/161, 477/149, 477/148, 477/163, 477/129
See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
3740615	June 1973	Vigini	361/159
4009695	March 1977	Ule	364/431.07
4021712	May 1977	Ishihara et al.	74/866
4102222	July 1978	Miller et al.	74/866
4131325	December 1978	Bayliss	303/93
4321946	March 1982	Paulos et al.	340/635
4373697	February 1983	Phelps	251/129
4550953	November 1985	Bartholomew	303/15
4779489	October 1988	Haley	74/844
4843902	July 1989	Patton et al.	74/335
5048329	September 1991	Marchini	73/168
5063813	November 1991	Lentz	74/866
5079971	January 1992	Yoshimura et al.	477/161
5115395	May 1992	Petzold	364/424.1
5119683	June 1992	Deutsch et al.	73/861
5197583	March 1993	Sakai et al.	192/35

ART-UNIT: 234

PRIMARY-EXAMINER: Teska; Kevin J.

ASSISTANT-EXAMINER: Louis-Jacques; Jacques H.

ATTY-AGENT-FIRM: Young, MacFarlane & Wood

ABSTRACT:

Pulse frequency modulation is used to control brakes and clutches which are operated by fluid pressure actuators controlled by electrically actuated solenoid valves. Short pulse periods for all duty cycles are generated by feedback from the solenoid valve or from the actuator. In one circuit an electrical control triggers a flip-flop which starts solenoid current. Solenoid movement results in back-emf and its effects on the solenoid flux field or current is detected and used as a feedback signal to reset the flip-flop to thereby turn off the current as soon as the valve is operated. In another circuit, a computer control emits a command for a certain pulse period. Actuator pressure or position is monitored to produce a feedback signal to the computer. If the signal is not received, the pulse period is increased for the next pulse command so that a sufficient pulse period will be found. If the magnitude of the actuator response exceeds a threshold, the pulse period is decreased for the next pulse command. Pulse width modulation may also be improved by the same technique for minimizing the pulse period at the lowest duty cycles and yet assuring actuation.

25 Claims, 10 Drawing figures

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Terms	Documents
US-5404301-A.did.	1

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